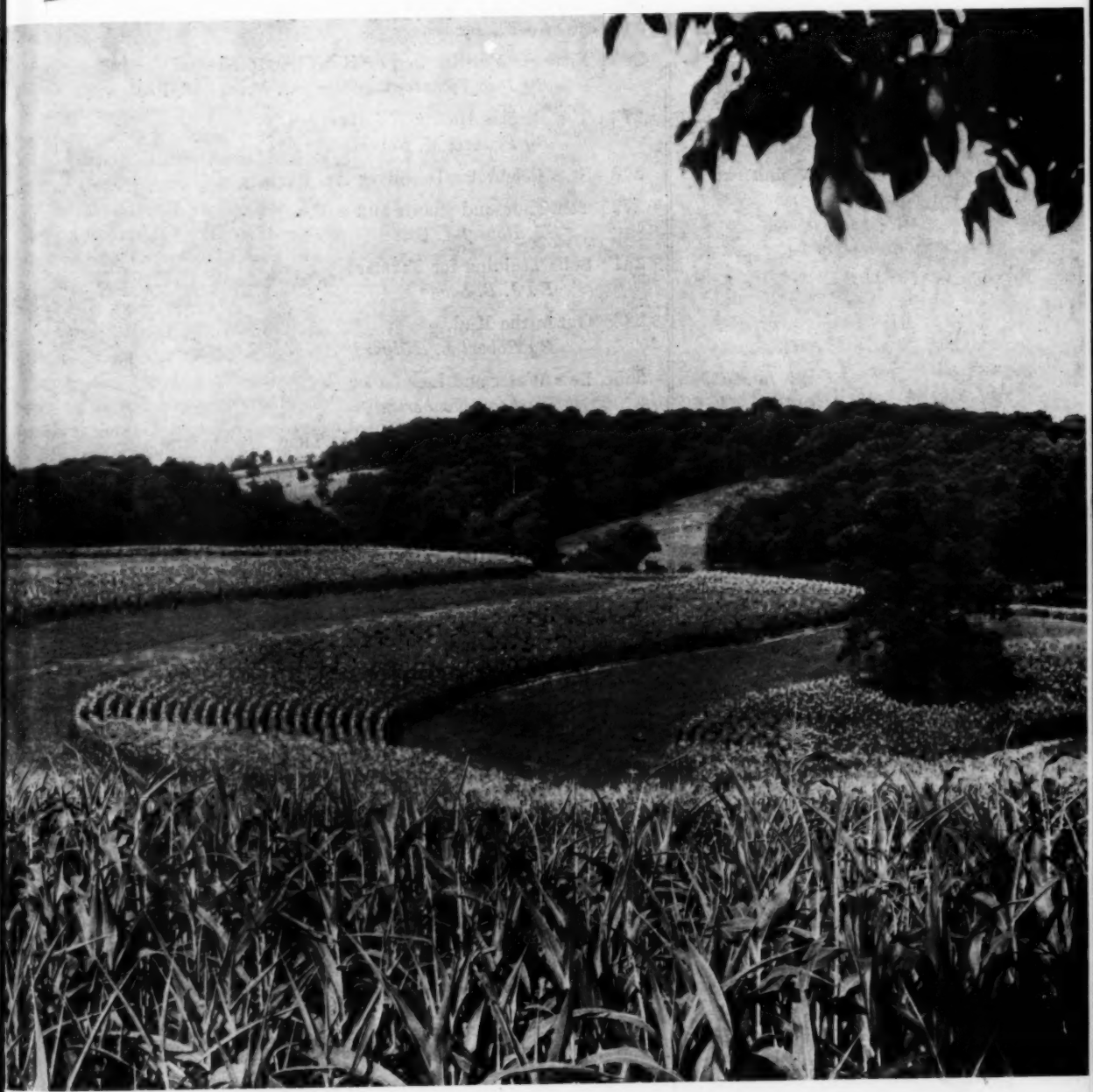
GENERAL INFORMATION

S. 85585

JULY 1960

Soil Conservation



SOIL CONSERVATION SERVICE • U. S. DEPARTMENT OF AGRICULTURE

Our lands . . . were originally very good; but use and abuse have made them quite otherwise . . . We ruin the lands that are already cleared, and either cut down more wood, if we have it, or emigrate into the Western country.

—GEORGE WASHINGTON

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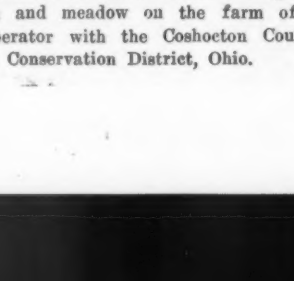


COVER PICTURE.—Contour strips of corn and meadow on the farm of a cooperator with the Coshocton County Soil Conservation District, Ohio.

Soil Conservation

EZRA TAFT BENSON
Secretary of Agriculture

DONALD A. WILLIAMS
Administrator, Soil Conservation Service

SOIL CONSERVATION is the official organ of the Soil Conservation Service, published by direction of the Secretary of Agriculture as administrative information required for proper transaction of the public business. The printing of this publication was approved by the Bureau of the Budget, June 26, 1958.

TOM DALE, Editor

15 CENTS PER COPY $1.50 PER YEAR

FOREIGN—$2.25 PER YEAR

25 percent discount on orders of 100 or more mailed to one address.

All orders for paid subscriptions go to the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

Newspaper Publishers and SCD's are

Harvesting a Double Crop

with Their Conservation Information Program

By Ed Livermore

THE OPA-SCD Conservation Information Program—sponsored jointly by the Oklahoma Press Association and the Oklahoma Association of Soil and Water Conservation Districts—is producing a double crop: a previously unharvested crop of dollars for newspaper publishers, and an unprecedented harvest of soil conservation practices on the land for Oklahoma farmers.

It was Leon J. "T-Bone" McDonald, assistant State conservationist, Soil Conservation Service, who conceived the idea that soil conservation districts, newspaper publishers, and "mainstreet" would make an unbeatable combination: The districts because soil conservation is a commodity they have for sale; newspaper publishers because they are in the advertising business; and "mainstreet" because the merchants believe in the district's commodity, and prosperity is their business.

The competition is keen between soil conservation districts in trying to win one of the coveted plaques presented by the press association. This is mainly because many district leaders feel that the conservation information program is a good gage of the interest and accomplishments in soil and water conservation work. In many districts the local publishers meet with the supervisors and help develop an information program "tailor-made" to meet the needs of the area.

Full-page advertisements featuring soil conservation practices and events appear to be the most popular item of the eight-point program. In 1959, 93 of the State's 275 newspapers published full-page spreads featuring some conservation activity.

These ads, sponsored by business firms, are designed to get more conservation in the minds and hearts of the people and on the land. More and more publishers are obtaining sponsors on an annual basis. Where this is done, full-page spreads are published monthly and bring in from $750 to $1,500 annually to the publisher.

Newspaper publishers over the entire State feel as did the State President of OPA when he presented plaques to winners at the annual meeting of OASWCD early this year. He said: "Any proceedings that we can take part in which are aimed at conserving our two most important resources—soil and water—are certainly worthwhile, and a pleasure." The publishers have an added feeling of appreciation for this information program in that they are harvesting a brand new crop of dollars in furthering this endeavor.

Lavern Fishel, president of the OASWCD, pointed out to supervisors of Oklahoma's 87 soil conservation districts that "the local newspapers and business men are among the most important resources available locally to help get the conservation job done. We should give business men an opportunity to identify themselves with our soil and water conservation program."

Several districts have found it

F. S. Hurd (left), oldest SCD supervisor in Oklahoma, accepting award plaque for his district from Ed Livermore, while Lavern Fishel (right), president of OASWCD, looks on.

Note:—The author is publisher of the *Sapulpa Herald*, Sapulpa, Okla., and is president of the Oklahoma Press Association.

both enjoyable and helpful to give "appreciation dinners" annually to business men who have sponsored ads during the year. At these dinners, accomplishments of the year are considered and plans are made for the year ahead. This type of cooperation makes for effective teamwork.

The genuine merit of the program is written on the pages of Oklahoma's soil. In Western Kay County SCD—after a year of organized publicity and a full-page spread published on a monthly basis—results showed increases of 145 percent in referrals received, 64 percent in ponds built, 108 percent in waterways built, and 215 percent in waterways sodded. In miles of terraces built, there was a 78-percent increase, and in miles of diversions 167 percent, while miles of drainage increased 250 percent.

In Noble County, where a similar publicity program had been carried on, results have been equally gratifying. Range seeding showed an increase of 61 percent over the preceding year, pasture sprigging was stepped up 125 percent, and pasture planting increased 594 percent, while proper use of range and pasture showed an increase of 75 percent.

SCS technicians discussing a group of full-page spreads on conservation that appeared in Rogers County newspapers.

These tangible benefits can be added up and give concrete evidence of the merits of a good information program. Possibly the greatest benefit has come, however, in a field that cannot be totaled on an adding machine. That is the field of good will—the field of joint accomplishment on a job for the common good.

Noble County SCD says, "The civic clubs, Chamber of Commerce, schools, churches, and other organizations have a better understanding of the district's objectives, and are more cooperative as a result of full-page spreads. These ads have improved the district's relations with the local newspaper. The publisher is eager to print district news items, benefit stories, and the activities of watershed groups."

While the use of full-page spreads has shown the most phenomenal growth, there are other facets to the conservation information program. Recognition is

From left: Walter William, supervisor, Checotah SCD; Foster Tripp, supervisor, Western Kay County SCD; Edward Johnson, supervisor, Noble County SCD; Nonnearl Zimmerman, clerk, Okmulgee County SCD; F. S. Hurd, supervisor, Arkansas-Verdigris SCD; and Ed Livermore, president, Oklahoma Press Association, display the plaques won by the SCD's in the 5 groups of the OPA-SCD Conservation Information Program.

given at the annual meeting of OASWCD to the districts who chalk up the heaviest score by the following standards: A conservation picture, or newspaper mat, with cutline is worth 75 points; a conservation story without picture or mat will earn 100 points, while the same story with picture or mat is worth 150 points. A district story written by someone other than district personnel will earn 200 points. A conservation editorial will earn 300 points, a full-page spread featuring some phase of the district's activities will bring 400 points, and a special conservation edition earns 500 points.

All districts are rated by the same measuring stick, but districts are classified according to the number of newspapers published within the district: those with only one newspaper; those with two; three; four; and those with five or more. In that way, each district is judged in comparison with other districts having the same newspaper facilities.

Scrapbooks for posting clippings are furnished by the State Soil Conservation Board. Neatness, originality, and artistic arrangement are considered in judging the scrapbooks on a comparative basis.

The first annual program proved its merits in 1958. Yet, participation practically doubled in 1959. Using the best "yardstick" available in arriving at results of the second year's work, it was found there had been approximately 5,250 items published, covering an estimated 110,150 column-inches, with around 85 editorials and 325 full-page spreads featuring the district's soil conservation program and activities.

This type of program does not have to be sold—to districts or to publishers—it sells itself. This crop of dollars and exceptional crop of conservation practices on the land can be harvested in any State when the State Press Association teams up with the State Association of Districts. We will be glad to give you the benefit of our experiences here in Oklahoma.

NITROGEN FERTILIZATION OF HOT CLIMATE GRASSES

By Jose Vicente-Chandler and Robert W. Pearson

THE yield potential of grasses in the tropics is much greater than in temperate regions because of the year-round growing season. For example, intensively managed grasses in hot climates can yield over twice as much forage as the highest yields of Coastal Bermudagrass in the Southeastern United States. If this potential is to be exploited, however, heavy fertilization, especially with nitrogen, is necessary. The requirements and problems of nitrogen fertilization of hot-climate grasses are much like those of temperate regions except that they are magnified.

In spite of the tremendous possibilities for production, progress in improved pastures has been slow in most tropical areas. Frequently, pastures consist of the native vegetation that volunteers on resting cropland, providing little feed of low value.

The results presented here are from experiments carried out in Puerto Rico where the mean annual temperature is about 75°F with a maximum average monthly variation of only 10°. Maximum day-length variation is less than two hours during the year and rainfall is about 75 inches yearly.

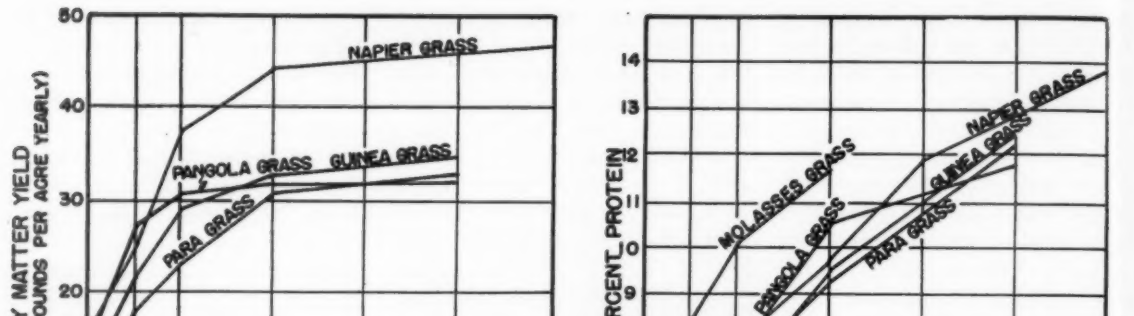
Napiergrass (*Pennisetum purpureum*), Guineagrass (*Panicum maximum*), Paragrass (*Panicum purpurascens*), and molassesgrass (*Melinis minutiflora*) are among the most widely used grasses of the humid tropics. In recent years pangolagrass (*Digitaria decumbens*) has shown promise of becoming an important addition. Despite the importance of these grasses, only during the past few years have their fertilization requirements for intensive forage production in the humid tropics been studied.

Results from three-year experiments on these 5 grasses in Puerto Rico are shown in the graph on the following page. Nitrogen rates varied from 0 to 1,600 pounds per acre annually while other nutrients were supplied at a constant, high level.

Note:—The authors are soil scientists, Agricultural Research Service, Rio Piedras, Puerto Rico and Beltsville, Maryland, respectively. This work was done in cooperation with the Puerto Rico Agricultural Experiment Station.

No. 56

This is the fifty-sixth of a series of articles to appear from time to time in explanation of the various phases of research being conducted by the Department of Agriculture on problems of soil and water conservation.



Napiergrass has consistently shown the highest yield potential of the five grasses studied, and the largest response to nitrogen fertilization. This grass yielded 7½ tons of dry forage without nitrogen, but nearly 3 times as much when 800 pounds of nitrogen was applied. The fertilized grass produced 130 tons of green forage, enough to feed about 6 cows per acre. Molassesgrass, on the other hand, had a very low yield potential, producing a maximum yield of around six tons of dry matter. Its yield was not increased by applying more than 200 pounds of nitrogen. The other grasses showed strong yield increases up to 400- or 800-pound applications of nitrogen.

Forage composition was markedly affected by nitrogen fertilization. The protein content of all the grasses increased sharply with nitrogen rates up to the highest level tested. Only traces of nitrate nitrogen were found in the forage even at the 2,000-pound rate of nitrogen fertilization. In these experiments the phosphorus content of the forage decreased slightly and lignin increased somewhat with nitrogen fertilization.

A Puerto Rico pasture that carries about 1 cow to 8 acres in a land where there is only 1 acre per person.

Even with the best management, including splitting the fertilizer into six applications annually, only about one-half of the applied nitrogen was recovered in the forage. This is in line with poor recoveries found for Coastal Bermudagrass at high rates of nitrogen application in the Southeastern United States.

Other experiments evaluated nitrogen fertilization in terms of animal gains. In one such experiment Napiergrass grown on a steep mountain slope with different rates of nitrogen was grazed. With 100 pounds of nitrogen only 580 pounds of beef were produced per acre annually compared to 1,300 pounds of beef at the 300-pound nitrogen rate. In this experiment no in-

crease in beef was made by increasing nitrogen rates to 500 pounds per acre.

As with most improved practices, the use of high nitrogen rates raised other problems. One of the most serious of these was the residual acidity created in the soil. At high rates of ammonium sources of nitrogen, extreme soil acidity was developed in only two or three years. For example, the application of 800 pounds of nitrogen per acre, as ammonium sulfate, for 2½ years in one experiment decreased the surface soil pH from 7.0 to 5.2 and the effect extended into the subsoil. More than five tons of limestone were required to restore this soil to its original level of bases. When ammonium nitrate or urea was used there was a similar but less drastic acid effect. With sodium nitrate, however, there was no appreciable decline in soil pH.

Another problem encountered with heavy nitrogen fertilization is burning of the grass. This caused a serious setback in growth, even with multiple splits of the application, where dry weather followed fertilization and where the fertilizer was applied directly on the clumps of grass.

Nitrogen fertilization also can change the species composition of pastures. When molassesgrass pastures are fertilized, for example, higher yielding grasses with more exacting fertility requirements such as Para, Guinea, and Napier take over.

Many factors influence the effective use of nitrogen by grasses. For example, temperature and variation in daylight—while not nearly as important in the tropics as in temperate regions—affected the growth rate of grasses appreciably.

The yield potential of Napier, Pangola, Guinea, and Para grasses is about one-third less during the somewhat cooler and shorter days of winter. This was true even when moisture and other factors favored maximum growth. The nitrogen response curve tends to level off at about the 400-pound rate during this period, compared to 600-800 pounds during the remainder of the year.

Guineagrass in the foreground received no nitrogen fertilizer, while that in the background received about 800 pounds of nitrogen per acre yearly.

Moisture is the chief climatic factor determining yields and response of grasses to nitrogen in the tropics. Guineagrass, for example, yielded only 6 tons of dry forage and responded to only the 100-pound rate of nitrogen with 35 inches of rainfall. With 80 inches, or with irrigation, this grass yielded about 17 tons and responded to 400-800 pounds of nitrogen per acre. In this connection it should be recognized that a given amount of rainfall is much less effective in the tropics than in temperate zones, because of the high year-round evaporation rate.

This field of heavily fertilized Napiergrass produced enough forage to feed about 8 cows per acre.

The grasses themselves have different inherent productive capacities. This is reflected in their response to nitrogen, as shown by the preceding graph. Optimum fertilization rates therefore are governed in large measure by the species.

Management practices can strongly affect yields and response of grasses to nitrogen fertilization. Napier, Para, and Pangola grasses yielded about a third more over a two-year period when cut close to the ground every 60 days than when cut to about eight inches. On the other hand, yields of Guineagrass were unaffected by cutting height, while molassesgrass was killed out by close cutting.

Frequency of cutting also strongly affects forage yields and efficiency of nitrogen fertilizer. Napiergrass receiving 800 pounds of nitrogen produced 12, 22, and 37 tons of dry forage per acre yearly

This Guineagrass pasture, fertilized with 1 ton of 15–5–10 fertilizer per acre yearly, carried 2½ cattle per acre and produced 1,200 pounds of beef per acre yearly.

when the grass was cut at 40-, 60,- and 90-day intervals, respectively. Quality of the forage decreased with length of harvest interval, however, as evidenced by a lower protein, calcium, and phosphorus content and an increase in lignin.

Whether the grasses are harvested by cutting or grazing also strongly affects yields and response to nitrogen fertilizer. Napier, Guinea, Para, Pangola, and molasses grasses yielded only about half as much with simulated grazing as with cutting management.

Availability of other nutrients often sharply limits the response of grasses to nitrogen. Tremendous quantities of nutrients may be removed from the soil in forage produced by properly managed, heavily fertilized grasses. For example, the forage from one field of heavily fertilized Napiergrass actually contained 670 pounds of nitrogen, 270 pounds of phosphate, 550 pounds of potash, 120 pounds of calcium, and 120 pounds of magnesium per acre.

While we normally expect to provide most of the nitrogen requirements of grasses through fertilization, the initial soil supply of other nutrients usually is depended upon. The very high yields of grasses grown under intensive management in the tropics, however, require a complete reevaluation of the overall fertilization program. In the example cited above the phosphate and potash removed from the soil by Napiergrass in one year are equivalent to over 1,300 pounds of superphosphate and 900 pounds of muriate of potash. At this rate, nutrients are soon depleted in even the most fertile soils. Hence, initial nutrient content of the soil is not a major factor in determining its long-range possibilities for production of intensively managed grasses. Fertilization of high-yielding grasses used for cut feed should generally be based on nutrient withdrawal in the forage with allowances for losses by erosion, leaching, fixation, etc.

Potassium in particular must be carefully considered. The following tabulation shows how strongly potash can affect yields when all other nutrients are provided in abundance.

Potash applied (lbs. per acre)	Dry forage produced (lbs. per acre)	
	Guineagrass	*Napiergrass*
0	9,900	5,000
200	22,300	23,600
400	30,600	27,800
800	32,800	36,400

The common sources of nitrogen appear to be about equally efficient in providing this nutrient to tropical grasses. Urea, ammonium sulfate, ammonium nitrate, sodium nitrate, and ammonium hydroxide produced equal yields of Napiergrass of similar protein content.

The number of applications in which a given amount of nitrogen is applied can affect efficiency of use. In one experiment there was no advantage in applying the nitrogen in 12 applications instead of 6 where 6 cuttings were made. Experiments are now underway to determine the effect of less frequent applications of nitrogen on yields and efficiency of nutrient use by grasses.

Minimum tillage saves Time and money

Minimum tillage may help farmers who want to boost their net incomes. R. A. Hinton, agricultural economist at the University of Illinois, figures that farmers using minimum tillage save $146 to $159 in operating costs on 100 acres of corn, compared with using conventional tillage.

The fixed investment costs of tractors and machinery would be about the same for both methods, however.

The farmer can also boost his net income by making good use of the time saved by minimum tillage. By producing more livestock or farming more acres he could earn from $155 to $172 more net income for each 100 acres of corn.

Figuring labor at $1 an hour, gains from minimum tillage would total $301 to $331 for each 100 acres of corn.

Modern Methods Make—

The Deserts Bloom —in a Hurry

By Francis M. Roberts

OTIS HELSLEY is not waiting to be shown good farming techniques on a Columbia Basin farm near Quincy, Washington. In partnership with his son, Don, he has a conservation plan well underway that is making even the professionals shake their heads in amazement.

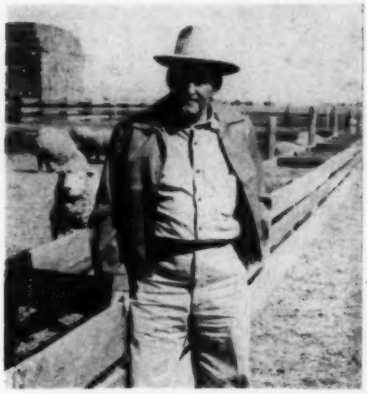
Although new to the Columbia Basin, Helsley is far from a novice in irrigation farming. He left his native State of Missouri 30 years ago and moved to the Twin Falls area of southern Idaho, where he learned most of his lessons about irrigation farming.

About 17 years ago Helsley made a trip to the Basin country to size up the opportunities he had heard so much about. "When I saw the land around Quincy, I didn't look any farther," he says. He purchased 160 acres then, but had to wait nearly 10 years before water deliveries were first made in the spring of 1953.

The Helsleys were quick to recognize that although their soil was basically fertile, one deficiency was inherent. Humus, often called the life of fertile soils, was low—as in most areas of low rainfall. Thus one of their main jobs was building up soil humus and fertility.

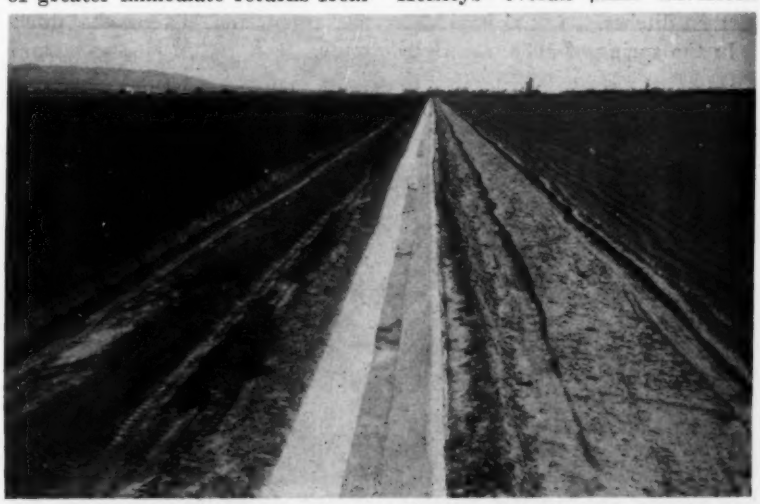
Farmers on newly-irrigated land often are tempted to grow high-value, soil-depleting crops, such as beans or sugar beets, despite the soil's immediate need for humus and organic matter. Although "a soil-depleting crop" in conservation terms, sugar beets have a history of stable returns to irrigation farmers. When Helsley sold his farm in Idaho he was not able to transfer his acreage allowance of this controlled crop. Thus, there was no temptation to start with sugar beets. Instead, alfalfa—the oldest and best known of soil-improving plants—became the predominant crop on the Helsley farm.

James H. Hansen, Soil Conservation Service technician at Quincy, says: "We try to persuade farmers on Class I land like Helsley's to have each field in alfalfa at least 25 percent of the time." Hansen admits he often is unsuccessful in this attempt. Farmers getting started are lured by the prospect of greater immediate returns from other crops. "Hence you can imagine my amazement," Hansen said, "when I discovered that Helsley and his son, Don, had two-thirds of their farm in alfalfa—over 2½ times the recommended minimum."



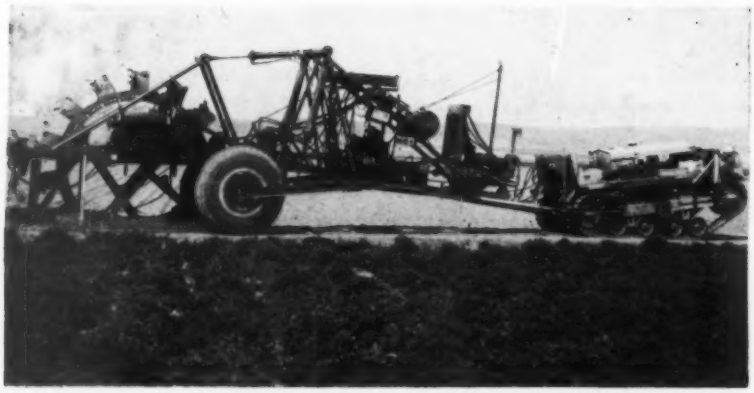
Otis Helsley in front of one of his feed bunkers.

The economics of farming practically dictated another part of the Helsleys' overall plan. Livestock



A finished, concrete-lined irrigation ditch on the Otis Helsley farm.

Note:—The author is civil engineer, Soil Conservation Service, Ephrata, Wash.



A side view of the ditching and trimming machine used on the Helsley farm. Hydraulic controls, activated by mercury contact switches, precisely determine the grade of the ditch.

were needed to use the alfalfa. Three hundred sheep do a pretty good job of this, and alfalfa leaves the farm only in the form of animal products.

While soil building was receiving high priority, physical improvements were not being neglected on the Helsley farm. A modern farm home and other neat farmstead buildings were constructed. Underground concrete pipelines extending nearly three-quarters of a mile in length were installed prior to 1958. This eliminated erosion and reduced the water loss in former earthen ditches.

In the spring of 1958, the Helsleys were ready for another bold step. A local contractor had shown them a plan for economically lining open ditches with concrete. The idea was new to this area, but it looked good to Otis Helsley. So, with technical help from SCS technicians working with the Quincy Soil Conservation District, he tackled the job.

Helsley soon discovered that such a project must follow several well-coordinated steps. Before the final step of placing the lining, a considerable amount of preparation was required. The first step was to survey and design the ditch route. SCS technicians gave him engineering assistance on this. A design was developed and stakes set to guide the construction. "Building a good foundation for the concrete is one of the most important parts of a good lining job," says the SCS engineer at Quincy. On the Helsley job, this important step was not neglected.

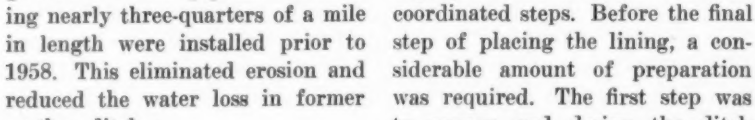
With the foundation ready, the next step was to cut and trim the earthen ditch section to precise grade and dimensions. How well this job is done determines how well the ditch will work. The dimensions chosen were modest. A 12-inch bottom width and 16-inch depth with sides sloping so that the width at the top was only a bit over three feet was adequate. A ditch of this size lined with concrete will carry water at a rate of more than three cubic feet per second.

The contractor that Helsley hired for the job had up-to-date equipment. He had a large ditching machine with an automatic trimmer. This machine, which operates like a trencher, cuts and trims the ditch to the exact dimensions chosen. True grade is obtained by the ingenious use of hydraulic controls activated by electrical contacts.

With the earthen ditches accurately cut, the liner, or "slip-form" as it is referred to by the contractors, is placed in a ditch and the magic of concrete lining begins.

A large crawler tractor pulls the slip-form along the preshaped earthen ditch. Premix-concrete trucks discharge freshly-mixed concrete into the hopper of the liner. As the liner is pulled forward, the concrete flows into the bottom and sides of the ditch. Steel surfaces shape and form the fresh concrete against the walls and bottom of the channel to a predetermined thickness, usually about two inches.

The fresh concrete must be just the right consistency for a good job.



The ditching and trimming machine accurately shapes the ditch to be lined with concrete.

Ditch lining on the Helsley farm proceeds at a rapid pace. The tractor in the background pulls the slip-form. The pre-mix concrete truck at the left pours concrete into the slip-form, while men in the foreground finish the shaping with trowels. The water truck at the right moistens the earth in the ditch prior to lining.

It can't be too dry or the lining will be rough and porous. If it is too wet, the sides will slump into the bottom.

Once everything is set, the operation proceeds at astonishing speed. In a matter of a few hours several thousand feet of lining can be placed. The last operation is to trowel expansion grooves and spray the surface with a sealing membrane which prevents the new concrete from drying too rapidly.

After a season of use, Helsley is enthusiastic as he describes the merits of his investment. "I believe the concrete ditch linings reduce my irrigation costs by half, mostly in labor savings. They also save water, and weeds on the ditch banks are no longer a problem," Helsley says. To further emphasize how he feels, another 3,000 feet is planned.

The contractor's price for the lining was $1.25 per linear foot. This price did not include grading the foundation, which varies considerably with each job. By cooperating with the ACP, cost-sharing payments of about 50 percent of the entire cost were available after the job was finished.

In six short years the Helsleys have made enviable progress in turning essentially desert land into a beautiful irrigated farm. The pattern they have set undoubtedly will have widespread influence in this new community.

Dairy heifers don't like unwilted silage

Dairy heifers ate sparingly and grew slowly when fed silage made from freshly chopped, unwilted grass-legume mixtures at the USDA Experiment Station, Beltsville, Md. This presumably was because some unidentified organic compound formed during the fermentation of the silage decreased the appetite of the animals. The unwilted silage also affected the appetite of mature cows, causing a decrease in milk production, but the effects were more marked in the growing heifers.

Soil tests show important deficiencies

The value of soil tests was proved in Marion County, Ore., recently when a cooperative mass sampling revealed several reasons why crops in that area aren't growing as well as they should.

Soils on 66 farms within a 7-mile radius of Stayton were tested as a cooperative effort of Oregon State College, fertilizer dealers, and a canning company. Soil samples were analyzed in the OSC soil testing laboratory. The mass testing was initiated by the canning cooperative, which felt that growers could improve production of some crops—especially sweet corn.

Too little boron was found in 209 of the 228 soil samples taken. Of these, 158 were critically low.

Forty-four samples were low in phosphorus, 24 critically low. But 75 samples were high, which reflects an excessively heavy use of phosphorus fertilizer by some farmers.

As for potash, 90 samples were below the level considered adequate for most crops.

The tests uncovered a shortage of magnesium in 15 samples. This was the first indication of magnesium shortages in the main Willamette Valley.

Taking many samples in a concentrated area provided good opportunity to compare soils and see what shortages were present in the area. Similar cooperative operations are underway near Gresham and Eugene.

◆

The application of a few ounces of molybdenum per acre more than doubled average alfalfa yields in Georgia Experiment Station tests. The researchers say that one of the apparent functions of the molybdenum is nitrogen fixation in the soil—the molybdenum-treated alfalfa was greener and higher in nitrogen content than the untreated alfalfa.

◆

In 1959 U.S. farms had 4¾ million tractors.

SCS Celebrates It Si

WITH soil conservation districts in the lead, many individuals and organizations throughout the country helped observe the 25th anniversary of the Soil Conservation Service.

The climax of a week-long expression of congratulations and good will came at a banquet in Washington, D. C., on May 4, sponsored by the National Association of Soil Conservation Districts. It was there, in the National Press Club, that William E. Richards, president of the NASCD, presented to Donald A. Williams, SCS Administrator, a handsome brass plaque (shown at the right).

Assembled for the banquet and presentation were 300 notables, SCS employees, and former employees. Forty members of Congress who had helped pass the original soil conservation act on April 27, 1935, and who are still in the Congress, were invited and several of these were able to attend. Bill Richards acted as master of ceremonies. Principal speakers at the celebration were: Senator Allen J. Ellender of Louisiana, Chair-

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THE SOIL CONSERV DISTS
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OF RESPONSIVE, UNSURPASSED
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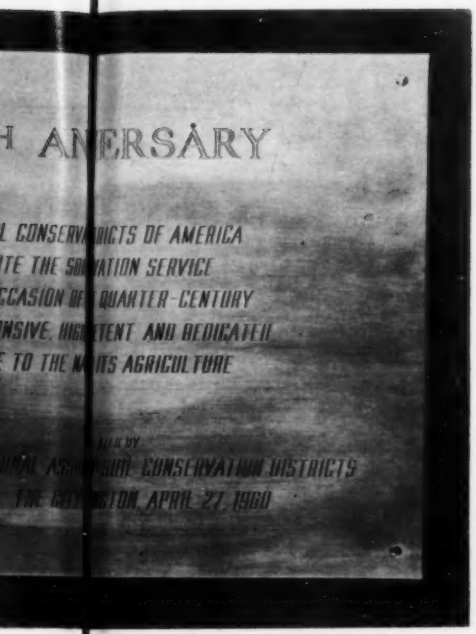
Pictures: (upper left) Senator Ellender ng b Club in Washington; (left center) Con Jer (lower left) banqueters with Bill Richa ding presenting plaque to D. A. Williams, S inist Jones talks about old times to Dr. and H. Secretary Peterson addressing banquet e; (u congratulates Gladwin Young, Deputy A r of

Silver Anniversary



Ellender ng banquet audience at National Press ter) Cong Jensen addressing banquet audience; ill Richa ding as emcee; (lower center) Richards lliams, S inistrator; (lower right) Judge Marvin Dr. and H. Bennett; (right center) Assistant banquet ; (upper right) Vice President Nixon eputy Ad r of SCS, on the SCS silver anniversary.

man of the Senate Committee on Agriculture and Forestry; Congressman Ben F. Jensen of Iowa; Judge Marvin Jones of Washington, D. C.; Hugh H. Bennett of Falls Church, Virginia; and Ervin L. Peterson, Assistant Secretary of Agriculture.

In addition to the plaque presentation, Gilbert Cox, vice president of NASCD, introduced all SCS employees present who were with the Service on April 27, 1935, and promised that NASCD would mail a certificate of commendation to each of them and to all other SCS employees who have the distinction of having been with the Service throughout its first quarter-century of existence.

Both Senator Ellender and Congressman Jensen were warm in their praise of the Service and soil conservation districts, while pointing up the importance of the soil conservation program of the past 25 years. Judge Jones, who was chairman of the House Agriculture Committee at the time Public 46 was passed, reminisced about the legislative problems involved in

getting this first soil conservation act passed by Congress. Dr. Bennett, the first Chief of the Service, told about early problems and hardships encountered in getting the Nation's soil conservation program underway. Assistant Secretary Peterson gave high praise to SCS and its employees and to soil conservation districts and other conservation organizations that have helped make the present conservation program of the Nation a reality.

Earlier, Senator Ellender, speaking on the floor of the Senate, said: ". . . Dedicated public servants of the Soil Conservation Service have successfully changed the attitude of millions of people about the need for conserving our land and water resources."

In commenting on districts, Ellender stated: "The growth of the soil conservation district movement in the United States is one of the phenomenal developments of the past quarter century. . . . In my mind, this represents the most successful experiment in agricultural democracy in the history of the United States."

Congressman Jensen, who also spoke on this subject on the floor of the House, opened his remarks by stating: ". . . this 25th birthday is extra special. It marks that important first quarter of a century for one of the greatest and most successful undertakings in the history of this country—our national soil and water conservation program—as well as for one of the most efficient and effective agencies of the Government we have ever had—the Soil Conservation Service."

In praising the soil conservation districts' participation in the national program, Jensen said: "You soil conservation districts before long will be celebrating your own 25th anniversary as the local, democratic organizations which have made it possible for the soil and water conservation program to move ahead in the splendid way it has. That was another red letter year when, in 1937, 22 States started the procession of States enacting laws enabling landowners and operators to set up their own legally constituted soil conservation districts."

The Iowa Congressman closed his remarks by stating, "Soil conservation has done more to save the American way of life than any other thing we have done since Revolutionary days."

Dr. Bennett, in reminiscing about some of the early problems and hardships in getting the soil conservation program underway, gave credit to rank-and-file employees of the Service for helping overcome some of the obstacles. In this connection, he said: "Our agency was characterized by its enthusiasm, an *esprit de corps.* That helped in countless ways. Clocks and regulatory hours were put aside for getting the job done."

All speakers at the banquet lauded "Chief" Bennett and his early work as the "father of soil conservation."

For a week or more before the NASCD banquet, editorial writers, columnists, reporters, and speakers throughout the Nation had been pointing up the significance of the "silver anniversary" of the soil conservation program and the Soil Conservation Service.

For example, an editorial in the Minneapolis Tribune concluded: "SCS has stood, in all its 25 years, for the conservation of all natural values and thus has helped conserve human values. Few Government agencies have attracted such dedicated personnel or returned so large a dividend on the dollar invested."

Secretary of Agriculture Ezra Taft Benson, in a press release, stated: "Soil and water conservation has made more progress in the last 25 years than in all the years back to colonial times."

He pointed out that although the Department of Agriculture has expanded and strengthened its conservation activities in recent years "the major credit for the outstanding progress belongs to the Nation's farmers and ranchers and to their locally-controlled soil conservation districts operating under State laws."

On the floor of Congress, Representative Bob Poage of Texas said, "I am confident that April 27, 1935, will be recorded as a turning point in the history of American agriculture, and world agriculture."

Senator James E. Murray of Montana commended SCS for "25 years of notable accomplishments." And of districts, he said: "Soil conservation districts . . . are changing the landscape of America into a pattern of utility and beauty."

Congressman Harold D. Cooley of South Carolina joined in the tribute to the Service by saying, "SCS is the evangelist of the gospel of the conservation of our most vital resources—soil and water. Through its leadership we not only are blessed with abundance of food and fiber in our time, but we also are bequeathing plenteousness of the land to the generations to follow us."

Senator Milton R. Young of North Dakota praised the Service on its 25th birthday, and of districts, said: "I should also like to pay my respects to another organization . . . the National Association of Soil Conservation Districts and the 14,000 soil conservation district supervisors . . . These dis-

tricts, as local units of government, are doing a tremendous job in soil and water conservation."

In commenting on SCS accomplishments, Senator Hubert Humphrey of Minnesota said: "The Soil Conservation Service has drawn into its ranks a corps of competent, scientific, dedicated public servants who have championed the cause of preserving America's natural heritage."

Senator Stuart Symington of Missouri noted the "silver anniversary" and said: "One of the main reasons the Soil Conservation Service has been able to build such an impressive record is because of the traditional democratic approach of local leadership and control. The individual farmers have the opportunity to join together in forming their local soil conservation districts. After this, the Federal Government steps in to help. . ."

Vice President Richard M. Nixon extended congratulations to the Service and soil conservation districts at a special meeting held in his office for that purpose on April 27. In discussing progress of the conservation program with Gladwin Young, deputy administrator of SCS, he credited the Soil Conservation Service and soil conservation districts with having helped to establish conservation as an integral part of modern scientific farming. He expressed pleasure over the interest and support given by farm and city people alike to the soil conservation program.

And so it went, not just in the halls of Congress and in the banquet room at Washington, but throughout the country, wherever conservationists congregated or editorial writers commented on the importance of the 25-year-old soil conservation movement. Practically all SCS employees, former employees, and well-wishers were a bit prouder of their parts in the 25 years of progress as a result of the "silver anniversary" celebrations.

D. A. Williams, administrator, summed up the reaction of SCS employees when he told Bill Richards and the audience at the National Press Club as he accepted the NASCD plaque:

"Tonight's observance is a proud moment for me, and I know it is for all SCS and ex-SCS people. . . . Thank you, Mr. Richards, and thanks to all the soil conservation districts and their dedicated leaders, without whom the accomplishments of these 25 eventful years would not have been so great."

Ten Thousand Plants and a Man

By Robert J. Olson

LENGTHENING shadows of a long summer day in the Palouse country often silhouette a lone figure on a tractor heading toward the sheds. This isn't a man working by the hour or for profits from his fields, but a man devoted to his job and seeing that it is well done. It is Ward Baird, farm superintendent at the SCS Plant Materials Center at Pullman, Washington. Baird's hours are those he feels are needed to seed the fields, cultivate the stands, and harvest the seed of new and un-

Note:—The author is the former Superintendent, Plant Materials Center, Soil Conservation Service, Pullman, Wash.

Ward Baird heading back to the sheds after seeding another field of grass.

Field hands removing all "off-type" plants from a grass seed production field at the SCS Plant Materials Center.

known plants that may find an important place in conservation farming and ranching in the Pacific Northwest.

As farm superintendent at the Center, Ward has found that this is not an ordinary job of farming where one, two, or maybe three different crops are grown. This is a 320-acre farm where there are often 25 different fields of grasses and legumes being raised for seed, and hundreds of plots where new grasses, legumes, trees, and shrubs are being tested.

The Center has been responsible for many new plants now used by conservation-minded farmers of the Northwest. Manchar smooth bromegrass, Greenar intermediate wheatgrass, Whitmar beardless wheatgrass, Latar orchardgrass, and Alkar tall wheatgrass are but a few of the many grasses developed there.

It is rewarding work for a dedicated man like Baird—to see a new plant show promise in a short, single row when it first comes from one of the four corners of the earth; then to watch it grow in stature as it is tested, compared, and evaluated with thousands of others until it proves to be the one plant that is needed for certain problem lands or soils in the Northwest. Then comes the increase of seed supplies so that pure seed will be available for seedgrowers who want to put it into commercial channels to meet the demands of those who want this new plant for their land.

Growing these many different grasses and legumes requires a special knack or ability in everything that is done. Seedbed preparation is a good example. Grass seedlings are small and weak. They must be given every chance for success. This means that the ground must be free of weeds and packed hard with a light cloddy surface on top. The seed has to be planted

Combining grass seed on the seed production farm of the SCS Plant Materials Center, Pullman, Wash. Test plots and seed increase blocks of the Center are visible in the center background.

Ward Baird sacking foundation seed of Whitmar beardless wheatgrass at the SCS Plant Materials Center, Pullman, Wash.

at the right depth, one-half inch to one inch, whether it is light and feathery, small as a pinhead, or has a tail as long as a pollywog.

While the techniques of making a seedbed and proper seeding are important, they are of little use if the equipment is not clean and a few of the wrong seeds get into a field. Air blasting and vacuuming as well as jacknives and screwdrivers are used to clean the equipment to get every seed from every crack and fitting. This fear of mixture is always present in every operation at the Center. Each piece of equipment is just as carefully cleaned, whether it is a combine, binder, seed cleaner, or drying floor.

As each field grows and produces seed, it is constantly checked to see that no weeds or stray plants are present. This means that many hours of labor are spent each year as crews go over the individual fields carefully looking for a stray plant that could contaminate the production of the entire field in one year. These are foundation fields where often one stray seed per pound cannot be tolerated.

When grass seed ripens it does not respect a man's plans or weekends. Unlike grain, it ripens quickly and shatters rapidly. When more than 20 different grasses and legumes, totaling 20,000 pounds or more, have to be harvested in 45 days, then a man shows his true worth in harvesting. Seldom has much of a seed crop gotten away from Ward Baird, even though fields that were too green one day were starting to shatter two days later.

Most farming operations of this type get a rest or "break" during the winter; but work continues at the Center. These many different lots of seed must be cleaned, sacked, and stored ready for shipment. As each lot is cleaned, different machines and adjustments are needed. Always the meticulous cleaning goes on after each lot.

Now the seed is ready to be shipped. Since these new materials were developed, tested, and produced at the Center, this is often the only available source of seed. Requests are received from research workers, experiment stations, and growers all over the world who want to test these new materials for their own use.

While these needs are recognized and serviced, the main purpose and function of the Center continues to be to develop new and better plants for conservation use in the soil conservation districts. It is toward this goal that all of the testing and most of the seed produced is used, and the efforts of men like Ward Baird are dedicated.

Soils Training for Farmers

By J. B. Seago

SEVEN years ago Don Bannister, soil scientist, and Gisli Johannson, work unit conservationist, were wondering how they could get across to the average farmer a better understanding of the soils on his farm. They figured that with a good understanding of his soils, a farmer could make better use of his soil survey map, and thus do a better job of applying soil and water conservation.

In reviewing other soils meetings and tours they noted that they were generalized discussions and did not cover all the information needed for an individual farm.

What about small group meetings, say, of eight to twelve farmers, for discussion of soils on their respective farms? They thought it might work, so they decided to try it.

Their first meeting was held in the work unit office of the Towner Soil Conservation District, Cando, N. Dak. Seven farmers attended and were enthusiastic about what they learned.

The two SCS men were encouraged. They met with four other groups that spring and fall.

Johannson and Bannister discovered that farmers who had been in one of these meetings reported their "discoveries" to their neigh-

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Note:—The author is soil scientist, Soil Conservation Service, Fessenden, N. Dak.

J. B. Seago (right) helps a farmer locate a mapping unit on the soil survey map of his farm at a soils training meeting in the Foster County SCD, N. Dak.

bors. This interest resulted in more meetings.

The word kept spreading and other work units in the north-central part of the State began using the idea. The same enthusiasm was reported.

"Farmers leave these meetings looking forward to the actual planning of their farms," Larry Bushey, work unit conservationist at McClusky, N. Dak., related. "With a good understanding of their soils, they see how and why conservation will help them with their soil problems. Visits to farmers, even a year after attending a meeting, are centered around the soil map."

The meetings usually are attended by eight farmers and their wives. They are held in the work unit office during the winter months.

The work unit conservationist selects the cooperators he is to work with on conservation plans and sends each an invitation. The invitation explains the reasons for the meeting and promises it won't last more than an hour and a half.

As each farmer shows up, he is given a folder containing a colored soil survey map of his farm with descriptions of each soil or capability unit.

The soil scientist explains how the survey was made and its purpose. He gives the geological background of the soils, explains capability units and how to interpret symbols and the color scheme on the map.

He then discusses each mapping unit found on the farms. He names each farmer having that unit on his land and helps locate the unit on his map. He outlines major soil, slope, and erosion features. He gives special emphasis to characteristics that indicate need for conservation treatment.

The work unit conservationist explains briefly the work of the soil conservation district and the value of a complete soil and water conservation plan. Problems dealing with vegetative, wildlife, or engineering practices he leaves until later to talk over with each farmer.

Growing interest is readily apparent by this time. The farmers usually are reluctant to call the session to a halt.

Proof of the pudding comes when the work unit conservationist follows up with a planning visit. He nearly always finds each farmer ready to begin his planning job and to make decisions based on the needs of the land. The outcome is a sound soil and water conservation plan, properly applied and maintained by an enthusiastic conservation farmer.

Conservation Planning Brings Schoolyard—

Out of The Mud

By Robert L. Hillyard

THE Mothers Club of Lucas School two years ago was asking questions about the muddy shoes and boots the children brought home, while residents of the community were talking about gullies on the new school grounds.

"It wasn't a pleasant sight to see the school children wading through mud to get to the new school cafeteria," said C. S. Barger, superintendent of Lucas School.

Mr. Barger and the school janitor are no longer troubled with muddy floors. The eroding slopes are now grassy benches. All this came about because of the cooperation the school board got from the Richland Soil Conservation District, which helped develop a conservation plan for the school grounds. This conservation plan was much the same as had been worked out for many farmers in the school district, but it was tailored to fit the specific problems.

Lucas School didn't always have mud and eroding slopes. Like most other school districts, however, it needed a new elementary building to relieve crowded conditions in the old building. The voters of the district approved the construction of a new elementary building on a 4-acre tract of land at the rear of the old building. The 4 acres lay on a little plateau about 30 feet higher than the original school grounds. A walk leading from the old building with a series of steps up to the new building was installed.

School board officials were afraid the steep slopes might wash and had the contractor stairstep them. Ridges were placed on the outside of the leveled areas, thus forming a series of bench terraces. Tile drains were installed under the terrace channels to remove surplus water. It soon became apparent that this system was not the whole answer to their problem. Water draining from the new building and the parking areas came down to the terraces, overtopping them and causing gullies to develop. Mud from the gullied area was deposited on the playground and sidewalks.

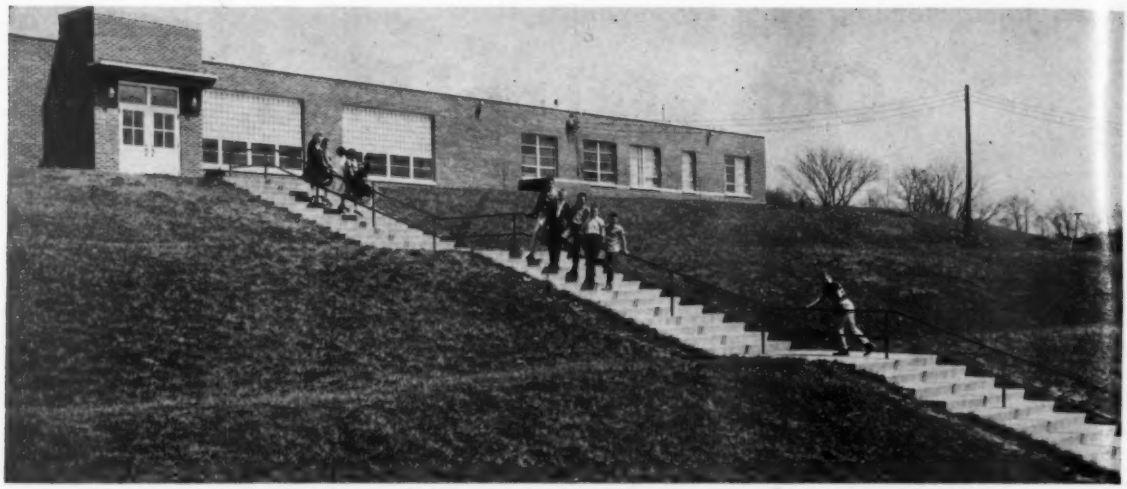
Another problem was apparent—that of getting grass to grow on the new area. The new building had been completed just in time for school to open in the fall and everyone had been more than busy and concerned with its operation. Since it was late in the year the officials had delayed the seeding work until school was dismissed for the summer.

The Mothers Club complained about the muddy shoes of the school children.

Emery Culler, a school board member and conservation farmer, explained to the other school board members how he had received help from the local soil conservation district to develop a complete soil and water conservation plan for his

Gullies were forming on the unprotected slopes of the school grounds.

Note:—The author is work unit conservationist, Soil Conservation Service, Mansfield, Ohio.



Grounds around the Lucas School after grading and regrassing project was completed.

farm. Following his explanation the school board decided to apply to the district for help with their water disposal and seeding problems.

District supervisors were quick to approve the Lucas School Board's request for a conservation plan. Bill Wareham, chairman of the district supervisors, contacted the school board and suggested that Soil Conservation Service technicians should attend the next school board meeting and decide with them what steps should be taken.

After meeting with the school board and deciding on a plan of action, a topographic survey of the school grounds was made to determine elevations and watershed areas. The SCS technicians then designed a tailormade erosion control plan.

This involved redesigning the terraces on the slopes, which had almost silted full, and repairing the clogged tiles. In order to reduce the amount of silt being deposited on the blacktop parking areas, broad shallow water channels were planned to move the water safely around these areas. The construction work was done by a local contractor.

The whole area was seeded as soon as possible to protect the construction work from erosion and siltation damage. Since the recommendations for seeding a school ground are somewhat different from the recommendations SCS workers give to farmers for meadow and pasture seedings, they consulted with the SCS agronomist.

He recommended a 2-inch layer of topsoil on the areas that were not too steep, and heavy fertilization. A seeding of Kentucky 31 fescuegrass was then made and mulched with straw. The straw was tied down with twine to prevent it from blowing and washing off.

In order to get the seeding and mulching done as soon as possible, the school board hired 6 men to rake and seed the banks. The janitor, the coach, and the superintendent seeded and mulched the rest of the area.

Now, a year later, looking at the children playing on the lush green playgrounds and clean concrete walks, it is easy to see that the soil-washing problem on the Lucas school grounds has been solved.

"Our conservation work cost the school around $4,500," Barger said, "but it was worth every penny of it. Our janitor now has no trouble keeping the halls and classrooms clean. Parents no longer complain of muddy shoes and boots. The Mothers Club is helping to landscape the school grounds with trees and shrubs, and I think we are going to have one of the nicest looking schools of this size in the State."

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A coastal bermudagrass spillway on a five-year-old irrigation pond "showed its stuff" last August during a heavy rain near Gilbert, S. C. Julian H. Keisler, a cooperator with the Lexington Soil Conservation District, told about the effects of the rain a few days later: "When this pond was constructed I wondered why the spillway should be 35 feet wide. On Sunday afternoon I found out. The water flowed one foot deep in the spillway and washed out the county road below the dam. But the coastal bermudagrass I planted in the bottom of the spillway did not wash out. Some of my neighbors were wishing for spillways similar to mine last Sunday afternoon when it rained so hard."

New Irrigation System Requires

Less Water and Less Labor

By Leon Kimberlin

"I'VE just finished irrigating 120 acres in 18 hours, and the job used to take 50 hours," Reuben R. (Gus) Gustafson, a cooperator of the Yuma Soil Conservation District, proudly cited.

Gustafson was irrigating on the 160-acre farm which he operates and manages for Hall Farms on the Yuma Mesa in southwestern Arizona. New concrete-lined ditches glistened in the morning sunlight, bringing life-giving water to seedling alfalfa in newly-leveled fields. In the background, land leveling equipment was putting the finishing touches on the northeast 40 acres. The irrigation system was new from one end to the other. The last field soon would be seeded to alfalfa.

When Gustafson, formerly of Nebraska, took over the operation of the farm in September 1959, he realized that he faced some challenging problems in farming the sandy soils of the Yuma Mesa. Gustafson had learned about soil conservation districts in Nebraska. He inquired about the district at Yuma and applied for assistance in developing a soil and water conservation plan for his farm.

From Soil Conservation Service technicians he learned some interesting facts about his soil resources. He learned that his soil has a low water-holding capacity and must be irrigated frequently to maintain a water supply for growing plants. It was pointed out that if too much water is applied, the excess water will move rapidly through the soil to areas below the root zone, taking with it valuable plant nutrients. He found that his major problems of soil management were water application, maintenance of soil organic matter and fertility, and wind erosion control. Gustafson decided to begin with the irrigation system.

Gustafson and SCS technician discuss merits of modern concrete-lined irrigation ditches.

SCS technicians assisting the district made engineering surveys and designed the new system. Fields were re-leveled for more uniform distribution of water. All dirt ditches were lined with concrete to reduce seepage losses in bringing water to the fields.

When the job was completed, 160 acres had been re-leveled and 7,260 feet of new concrete ditches had been constructed.

Note:—The author is soil conservationist, Soil Conservation Service, Yuma, Ariz.

Gustafson opens a turnout from a concrete-lined ditch that delivers a full head of water to one of his border plots.

Gustafson uses a soil auger to estimate soil moisture needs.

When Gustafson began using the new system, he found he could apply water to his fields in predetermined amounts by regulating the time the turnouts were opened for each border. Soil moisture needs are determined with the aid of a soil auger so that excess application of water can be held to a minimum. Past records of water use compared with his present figures indicate the new system will save 900 hours of labor each year and reduce by half the total amount of water used. This represents a saving of approximately $10 an acre per year.

In addition to the irrigation system, Gustafson's soil and water conservation plan includes crop rotations, crop residue management, cover crops, and other management practices which he has selected to best accomplish his objectives of soil maintenance and improvement. He believes in a well-rounded operation, but he is quick to point out the progress possible in water management.

The Right Tools At the Right Time

By J. Alton Daniel

"FOR want of a nail . . . a Kingdom was lost," so a famous quotation goes. And you could also say, "For want of the right tools at the right time . . . a conservation job was lost."

For example, an SCS technician may go to the field to survey a stock pond, but end the day showing a farmer how to use a tree injector for timber stand improvement. That is, he *could* show the farmer how to use a tree injector if he happened to take one along on that trip.

Such incidents can and often do occur. In most cases, tools are left behind because they are forgotten or for lack of a proper place to carry them. Equipment can become "shopworn" from bouncing around in the bed of a pickup. Tools and instruments often are damaged more from rough riding in pickups than from actual use. Also, there is the endless chore for the technician to load and unload these items each morning and evening. And there is his never-ending worry about the equipment's suffering from the weather or being stolen. It is no wonder, then, that a full set of conservation tools is not taken to the field every day.

To avoid any chance of technicians going to the field without proper equipment, the Soil Conservation Service in Arkansas started

Note:—The author is area conservationist, Soil Conservation Service, Nashville, Ark.

A remodeled rocket-shipping case with the tools usually carried in it by SCS technicians in Arkansas.

looking for a solution. This was simple—equip the technicians' pickups with tool boxes. But tool boxes don't come cheap—a good wooden box costs $40 to $50, a metal box $50 to $90. For either, the cost for the State could run into a fancy figure.

The U.S. Navy came to the rescue. At the Camden, Ark., Ammunition Depot the Navy was ready to dispose of several hundred wooden rocket-shipping cases. These sturdy cases had been fabricated with metal connectors, which prevented their being scrapped for lumber. As a result, their only reuse appeared to be as storage boxes or firewood. The commanding officer of the Ammunition Depot agreed that the rocket cases could possibly be used as tool boxes. He also stated that he couldn't think of a better use for the cases than furthering soil and water conservation.

The Soil Conservation Service obtained one box to prepare a sample. The top lid was covered with metal sheeting to make the box waterproof; two strap hinges were added to make a swinging lid; a hasp was attached so that the box could be locked. Since the case was several inches longer than a pickup bed, the bottom two-thirds of the box was shortened sufficiently to fit inside the pickup. By extending the top one-third over the pickup tailgate, that portion of the box was long enough to hold an engineering rod.

Here are some of the items one of the tool boxes can carry: an engineering rod, a level instrument with tripod, an axe, a tree injector with a can of mix containing oil and 2,4,5-T for demonstrating timber stand improvement, a soil auger and soil testing equipment, an increment borer for determining tree growth, visual aid material illustrating the various conservation practices, a woodland information stick, and other similar conservation tools and equipment.

The cost of converting each rocket case to a tool box was about $8. Compared to a possible cost of $40 to $50 each for new wooden tool boxes, a considerable saving was made by the conversion. Multiply the saving on one box by the number needed in the State and several thousand dollars were saved. The conversion of rocket cases to tool boxes was literally an act of conservation.

Arkansas technicians now can take off any morning with no worries about the type of conservation jobs they may encounter. They can leave the tools in the box under lock and key in any type of weather. With the right tools at hand, many conservation jobs get done.

A Lot of Common Sense

JAMES B. KELLY of Socorro, New Mexico, better known as "J. B." to his friends who include most of the people of Socorro County, is actively interested in nearly everything pertaining to farming and ranching in the county.

Having been born and raised in Socorro County on a ranch, it was natural for "J. B." to stay in the agricultural field. So after graduating with a degree in Agriculture from New Mexico State University in 1948, he came back to Socorro County, and on a shoestring purchased a 152-acre farm where he raises cotton, alfalfa, and feed, and operates a livestock feeding enterprise.

Although plenty busy with his own farming and ranching operations, J. B. finds time to take part in most agricultural affairs of the county. He is a supervisor of the Socorro Soil Conservation District, executive secretary of the Socorro Livestock and Farm Bureau, serves as supervisor of the bracero hiring program in the county, and is on the County Rodeo and Fair Committee.

His active interest in agriculture has won him many awards. Among them are awards for being an outstanding conservation farmer, twice an outstanding District supervisor, a Bankers Award, and many others. His latest honors were to be chosen as the Outstanding Young Farmer-Businessman of 1959 for the State of New Mexico and one of the four Outstanding Young Farmers of the Nation by the Junior Chambers of Commerce.

James B. Kelly

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Soil and water conservation has been one of his main interests ever since he started farming and ranching. He has served as a supervisor of the Socorro Soil Conservation District since 1957 and has been a member of conservation committees, both local and Statewide, numerous times.

In addition to his farm, J. B. has acquired an 18,950-acre ranch adjacent to the farm, and both places have complete conservation plans on which over 90 percent of the planned work has been applied.

J. B. started his conservation work by first throwing a lot of small fields together into groups having similar soil types. Then he launched into a heavy land-leveling program assisted by SCS technicians who worked out leveling plans, designed the irrigation system, and recommended cropping systems to best fit the soils.

The heavy "adobe" soils, which are common along the Rio Grande River Valley of Central New Mexico, are J. B.'s dilemma. He has tried everything to improve the soil structure, from hauling tons and tons of cotton gin trash and spreading it on the fields, to using waste perlite (treated volcanic glass, used as a lightweight aggregate). Now he is considering deep-plowing or sub-soiling to improve his irrigation efficiency.

In a few short years all his fields have been leveled, complete irrigation systems installed, livestock ponds constructed, wells drilled, irrigation reservoirs put in, crop rotations and crop residue uses planned and followed, along with grass management and erosion control work.

J. B. knows most of the textbook answers but does not consider himself a textbook farmer. He says, "I mix a little theory with practicability, add some good advice, and a lot of common sense, and it pays off."

—James E. Reeves

New Variety of Russian Wildrye

A new variety of Russian wildrye is "one of the best grasses we have for dryland conditions," says A. D. Dotzenko, associate agronomist at Colorado State University.

"It can survive long periods of drought without appreciable loss in stand, has a fairly high protein content at most stages of growth, and stays green through a greater part of the summer," Dotzenko said. "In addition, it resists lodging and produces larger seeds than commercial wildrye. This is important in establishing plantings because larger seeds produce stronger seedlings."

The Vinall variety, a selection from commercial wildrye, was developed by ARS scientists at the Northern Great Plains Field Station at Mandan, N. Dak. It is the first named variety of Russian wildrye in the United States.

Under Colorado conditions, its seed production is somewhat erratic, but still superior to that of commercial wildrye. All tests indicate seed quality and forage production have not been sacrificed in selecting the new variety for high seed yield.

High-Yielding Corn Can Aid Soil Conservation

Efficient corn-growing methods that produce high yields per acre can be an important soil conservation measure, reports Delno Knudsen, Extension agronomist at the University of Nebraska.

"If a farmer needs 2,000 bushels of corn to feed his livestock, he will do a better job of soil conservation by growing 20 acres of corn yielding 100 bushels per acre, than by growing 40 acres averaging only 50 bushels per acre," Knudsen points out.

"By concentrating his corn growing on 20 top-producing acres, the farmer can put the remaining 20 acres into erosion-resistant crops such as grasses and legumes."

◆

Food prices averaged about 2 percent higher in January 1960 than in January 1952, as compared with an average increase of about 15 percent in other cost-of-living items over the same period.

◆

"Never in history have so many been fed so well by so few. The productivity of our agriculture is largely responsible for the emergence of the United States as the strongest, wealthiest, and foremost nation in the world today."

—Ezra Taft Benson
Secretary of Agriculture

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SOIL CONSERVATION

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VOLUME XXV

August 1959 to July 1960

UNITED STATES DEPARTMENT OF AGRICULTURE

Issued September 1960

UNITED STATES DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

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U.S. GOVERNMENT PRINTING OFFICE: 1960

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